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ABSTRACT:

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SOLUTION: This system is composed of plural pieces of electronic equipment 3, 3A and 4, a serial line 5 for bidirectionally transmitting data for remote control and digital AV data, a remote control server device 1 having a server control means 10 having a means for receiving a remote control signal, a means for separating remote control data, a means for temporarily

storing remote control data and a transmission destination discriminating means for discriminating the destination to transfer the remote control data and a line control part 20 for communicating out the remote control data to the serial line, and a remote control transmitter/receiver 2 for receiving the remote control data transferred through the serial line 5 and sending these data to the electronic equipment 4 and 4A without dedicated control terminal.

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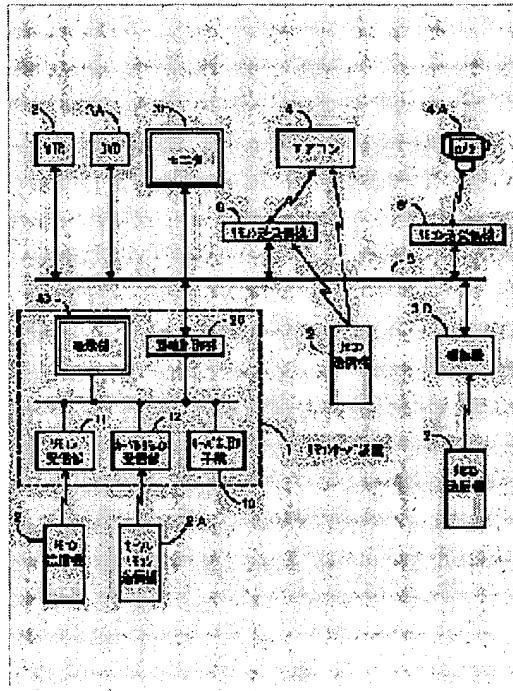
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(54) REMOTE CONTROL SERVER SYSTEM

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] It is concerned with the remote control system which carries out remote control of two or more electronics control devices, and is involved in the remote control server system which has the serial circuit which carries out bidirectional transmission of the data for remote control, and the digital AV data especially, and remote control server equipment.

[0002]

[Description of the Prior Art] The configuration and actuation of an outline are explained using the system configuration Fig. of the remote control server system by the conventional technique shown in drawing 5 . Remote control of the electronic equipment which has exclusive control terminals, such as VTR3, DVD3A, monitor 3B, editor 3D, and camera equipment 3C that has a revolution function, the nothing electronic equipment of exclusive control terminals, such as an air-conditioner 4, etc. is carried out to the remote control server system of this example. Two or more sets of electronic equipment are serial circuit 5A which transmits only control data, such as RS232C specification, RS-423A specification, and I2C specification, and communication link connection is made with remote control server equipment 1A. Usually, remote control of these devices is performed by turning the remote control transmitter 2 for applicable devices to the remote control receive section 11 of remote control server equipment 1A, and carrying out an actuation input. Server control means 10A restores to the received remote control signal, separates a device code, and controls it on the corresponding electronic equipment by which storage registration is carried out beforehand via line control section 20A and serial circuit 5A. To electronic equipment without exclusive control terminals, such as an air-conditioner 4, the modulation output of the remote control data transmitted via serial circuit 5A is again carried out by remote control transmitter 6A connected to serial circuit 5A. Generally, these electronic equipment has the remote control receive section, and it can do remote control directly with a remote control transmitter. Moreover, at the electronic equipment 3, 3A, and 3C and 3D which have a control terminal, the operating state of a device can be known by the server equipment 1A side.

[0003] However, in order that serial circuit 5A may transmit only control data, it cannot carry out bidirectional transmission of the AV data, but has connected between each electronic equipment using a separate signal-transmission circuit. For this reason, there is a trouble referred to as having to install independently the transmission line of a control signal and the transmission line of AV signal. Furthermore, there is also a trouble which cannot send and receive remote-control data and signal data with the same transmission equipment and to say in spite of a digital AV signal. The remote control server system distribution which can carry out high-speed transmission of remote control data and the AV signal data in the same transmission line is called for.

[0004]

[Problem(s) to be Solved by the Invention] In view of the trouble and the technical problem that it explained above, this invention makes communication link connection of remote control server equipment and two or more electronic equipment by the serial circuit, and aims at the remote control

server system distribution transmitted to remote control data, AV signal data, and coincidence.

[0005]

[Means for Solving the Problem] In the remote control server system constituted from two or more AV equipments and living devices, a serial circuit, and remote control server equipment that carries out remote control of the device of a serial circuit course and plurality Two or more electronic equipment with an exclusive control terminal or control-terminal[exclusive]-less electronic equipment (a doubling thing is called below two or more electronic equipment for both), The serial circuit which carries out bidirectional transmission of the data for remote control, and the digital AV data, A means to receive the remote control signal from the remote control transmitter of two or more electronic equipment, The server control means which has a transmission place judging means to judge this remote control data transfer point from a means to separate remote control data from the received remote control signal, a means to store remote control data temporarily, a means to memorize the remote control data of two or more electronic equipment, and the separated remote control data, It constitutes from remote control server equipment which has the line control section which carries out the communication link output of these remote control data at a serial circuit, and a remote control transmitter-receiver which receives the remote control data transmitted via the serial circuit, and is sent out to control-terminal[exclusive]-less electronic equipment.

[0006] With the remote control receive section which receives the remote control signal from the remote control transmitter for two or more electronic equipment for remote control server equipment, and restores to remote control data The line control section which performs communication link connection control with a serial circuit, and the remote control receiving memory which stores temporarily the remote control data which carried out the reception recovery, The device code table which has memorized the device code for every electronic equipment, and the control code table which has memorized the control code for every device code, The transmission place judging section which separates a device code from remote control data, and judges the transmission place of data from this device code, It constitutes from the data transfer section which carries out the transfer output of the remote control data stored temporarily in remote control receiving memory, the transmit data composition section which carries out the synthetic output of the predetermined transmit data, and a display which displays the situation of equipment of operation.

[0007] It considers as an ultrasonic transmission means to consider as a feeble electric-wave transmission means to receive the remote control signal which is made into an infrared transmission means to receive the remote control signal which acted the pulse modulation of the infrared radiation as the remote control receive section and which carried out pulse modulation of the feeble electric wave, or to receive the remote control signal which carried out pulse modulation of the supersonic wave.

[0008] The received-data separation section which separates remote control data into remote control server equipment from the received data received via the serial circuit, With the device actuation receive section which does separation reception of the status data of electronic equipment of operation from the received data which carry out additional installation of the circuit remote control receive section which does the reception recovery of the remote control data sent out from the remote control transmitter-receiver, and which received via the serial circuit The actuation menu generation section which generates the menu screen for operating two or more electronic equipment by remote control which carries out additional installation of the device action indication section which generates the signal which displays the operating state of a device on a display from these status data of operation, The operation mode judging section which judges the operation mode for a device similarly from the selected menu to be the judgment device judging section, Carry out additional installation of the device code generator which generates a device code, and the control-code generation section which generates a control code. The reservation input section which carries out additional installation of the cursor remote control receive section which receives the remote control signal from a cursor remote control transmitter and which receives the reservation input of the operation mode of electronic equipment, Additional installation of the reservation memory which memorizes the operation mode data reserved as the timer which manages time amount is carried out. Additional installation of the energy-saving control

section which performs energy-saving (energy saving) control of a device from the time data of the timer which manages time amount, and the status data of the device which the device actuation receive section received of operation and said timer is carried out.

[0009] serial -- a circuit -- IEEE1394 -- specification -- being based -- a serial transmission -- a circuit -- ** -- carrying out -- USB -- specification -- being based -- a serial transmission -- a circuit -- ** -- carrying out -- UART -- specification -- being based -- a serial transmission -- a circuit -- ** -- carrying out -- EIA/TIA - 64 -- specification -- being based -- a serial transmission -- a circuit -- ** -- carrying out -- VESA -- FPDI - two -- specification -- being based -- a serial transmission -- a circuit -- ** -- carrying out -- or -- LAN -- specification -- being based -- a serial transmission -- a circuit -- ** -- carrying out .

[0010] It constitutes at the line-control section which makes communication link connection of the remote-control transmitter-receiver with a serial circuit, the reception judging section which separate transmitting assignment place data from the received data from this serial circuit, and judges reception authorization, the equipment ID memory which have memorized ID of this equipment, the data-transfer section transmit the remote-control data out of which reception authorization came, and the modulation transmitting section become irregular about these remote-control data, and carry out a transmitting output.

[0011] It considers as a feeble electric-wave transmission means to transmit the remote control signal which is made into an infrared transmission means to transmit the remote control signal which carried out pulse modulation of the infrared radiation for the modulation transmitting section and which carried out pulse modulation of the feeble electric wave, or considers as the infrared transmission means based on Ir-DA specification.

[0012] Additional installation is carried out in the reception recovery section which carries out the reception recovery of the remote control signal and the data signal from a remote control transmitter or electronic equipment at a remote-control transmitter-receiver, the receiving data memory which stores received data temporarily, the remote-control data separation section which separates remote-control data from these received data, the transmitting claim section charged in data transmitting authorization to remote-control server equipment, and the circuit transmit data generation section generate the transmit data transmit to a serial circuit.

[0013] It considers as a feeble electric-wave transmission means to receive the remote control signal which is made into an infrared transmission means to receive the remote control signal which carried out pulse modulation of the infrared radiation for the reception recovery section and which carried out pulse modulation of the feeble electric wave, or considers as the infrared transmission means based on Ir-DA specification.

[0014] Additional installation is carried out in the circuit data receive section which does additional installation of the data receive section which receives the digital AV data sent out from electronic equipment, various data, etc., and the data transfer section which carries out the transfer output of the this received data at a serial circuit, or receives digital AV data, various data, etc. from a serial circuit to a remote control transmitter-receiver, and the data transmitting section which carries out the transmitting output of the this received circuit data at electronic equipment.

[0015] The data identification code showing the classification of the data transmitted to the logical organization of circuit data which transmits a serial circuit, the device ID code showing ID of the device of a transmission place, the device code of the electronic equipment which carries out remote control, and the control code showing remote-control mode are included.

[0016] Additional installation of the transmitting ID code with which ID of transmitting-side electronic equipment is expressed to the logical organization of circuit data which transmits a serial circuit, and the status code showing the status of this electronic equipment of operation is carried out.

[0017]

[Embodiment of the Invention] Drawing 1 is the outline system chart of one example of the remote control server system by this invention. Drawing 2 is the important section block diagram of one example of the remote control server equipment by this invention. Drawing 3 is the important section

block diagram of one example of remote control ***** by this invention. Drawing 4 is the logical organization Fig. of the circuit data based on this invention. The outline configuration and actuation of a remote control server system by this invention are explained using drawing 1.

[0018] The remote control server system of an example Two or more electronic equipment 3, 3A, and 3B with an exclusive control terminal, 3D, or control-terminal[exclusive]-less electronic equipment 4 and 4A, The serial circuit 5 which carries out bidirectional transmission of the data for remote control, and the digital AV data, A means to receive the remote control signal from the remote control transmitter 2 of two or more electronic equipment (remote control receive section 11), From the received remote control signal, remote control data The means and remote control data to separate The remote control data of a means to store temporarily, and two or more electronic equipment The remote control server equipment 1 which has the server control means 10 which has a transmission place judging means to judge this remote control data transfer point from a means to memorize, and the separated remote control data, the line control section 20 which carries out the communication link output of these remote control data at the serial circuit 5, It consists of the remote control transmitter-receivers 6 and 6' which receive the remote control data transmitted via the serial circuit 5, and are sent out to the control-terminal[exclusive]-less electronic equipment 4 and 4A.

[0019] Subsequently, outline actuation is explained. Remote server equipment 1 carries out the reception recovery of the remote control data in the remote control receive section 11 from the remote control signal from the remote control transmitter 2 of two or more electronic equipment. A transmission place judging means separates a device code from remote control data, and judges the transmission place registered beforehand based on this device code. The transfer output of these remote control data is carried out via the serial circuit 5 at the judged transmission place. The remote control data outputted to the serial circuit 5 may be inputted into the remote control receive section of electronic equipment as the case where it is inputted into the control terminal of direct electronic equipment, through the remote control transmitter-receiver 6. Device transmission of the AV signal data is carried out by the time-sharing method via the serial circuit 5 like remote control data.

[0020] The serial circuit 5 is the serial transmission circuit based on IEEE1394 specification, the serial transmission circuit based on USB specification, the serial transmission circuit based on UART specification, the serial transmission circuit based on EIA/TIA-64 specification, and VESA. There is a serial transmission circuit based on FPDI-2 specification or a serial transmission circuit based on LAN specification. Selection adoption is carried out by conditions, such as capacity of the data to transmit, transmission speed, maximum length of a track, and quantity of electronic equipment. Furthermore, even if the transmission line of a serial transmission circuit is based on which specification, it is formed with the metallic conductor or the optical fiber.

[0021] The configuration and actuation of remote control server equipment 1 are explained using drawing 2. The remote control server equipment 1 of an example The remote control signal from the remote control transmitter 2 of two or more electronic equipment The control code for every device code table 15 and device code which has memorized the remote control receive section 11 which does a reception recovery, the line control section 20 which performs communication link connection control with the serial circuit 5, the remote control receiving memory 13 which stores remote control data temporarily, and the device code for every electronic equipment A device code is separated from the control code table 16 and remote control data which have been memorized. From this device code, the transmission place of data The transmission place judging section 19 to judge, the data transfer section 17 which carries out the transfer output of the remote control data stored temporarily in the remote control receiving memory 13, the transmit data composition section 18 which carries out the synthetic output of the predetermined transmit data, the display 40 which displays the situation of equipment of operation, and a display The standard configuration is carried out by the system memory 35 which has memorized the operating-sequence program of the display and control section 24 which carries out a display control, and each part of the inside of equipment, the control section 36 which performs a control command to each part of equipment based on an operating-sequence program.

[0022] Furthermore From the received data received by the serial circuit 5 course, remote control data

The remote control data separation section 14 to separate, the circuit remote control receive section 22 which does the reception recovery of the remote control data sent out from the remote control transmitter-receiver 6, the device actuation receive section 23 which does separation reception of the status data of electronic equipment of operation from the received data received by the serial circuit 5 course, From these status data of operation, the operating state of a device The signal displayed on a display 40 The device action indication section 25 to generate and two or more electronic equipment The menu screen for operating by remote control The actuation menu generation section 26 to generate, the device judging section 27 which judges a device from the selected menu, the operation mode judging section 28 which judges the operation mode similarly, the device code generator 29 which generates a device code, the control-code generation section 30 which generates a control code, The remote control signal from cursor remote control transmitter 2A The cursor remote control receive section 12 which receives, The reservation input of the operation mode of electronic equipment The reservation input section 31 and time amount to receive Additional installation of the timer 34 to manage, the reservation memory 32 which memorizes the reserved operation mode data, the energy-saving control section 33 which performs energy-saving (energy saving) control of a device from the status data of a device of operation and the time data of a timer 34 which the device actuation receive section 23 received is carried out.

[0023] Detail actuation is explained in accordance with the flow of a signal. Remote control (remote control) begins from a remote control signal being sent from the general-purpose remote control transmitter which has the specific remote control transmitter 2 or specific learning function for electronic equipment like the conventional technique. As for a remote control signal, pulse code modulation of infrared light, a feeble electric wave, or the supersonic wave is carried out by remote control data. Remote control data consist of control codes showing the device code showing a manufacturer and a device, and a control function etc. the receive section of a remote control signal -- **** -- when the device code which carried out the reception recovery of this remote control signal, and was received is in agreement with an applicable device code, general electronic equipment takes in and decodes a control code, and controls this device. Furthermore, when carrying out systems operation by much electronic equipment, electronic equipment 3, 3A, and 3B, 3D, etc. which have an external-control terminal based on the unified specification by which communication link connection was made through the serial circuit 5 at remote control server equipment 1, the electronic equipment 4 and 4A without an external-control terminal, etc. are intermingled. Two-way communication is possible for an external-control terminal, and it can send the status of operation by the side of this electronic equipment, a data demand, etc. to remote control server equipment 1.

[0024] The remote control receive section 11 receives a remote control signal, and restores to remote control data. While remote control data are stored temporarily in the remote control receiving memory 13, the separation output of the device code is carried out by the remote control data separation section 14. The transmission place judging section 19 specifies the transmission place of these remote control data from the installation address of the device beforehand registered into installation address memory (not shown). The data transfer section 17 inputs into read-out and the line control section 20 the remote control data stored temporarily in the remote control receiving memory 13. The line control section 20 sends out these remote control data to the device of an assignment transmission place via the serial circuit 5. The line control section 20 has functions, such as communication protocol control through the serial circuit 5, polling control, transmission place assignment, and transmission and reception of digital AV data, and consists of driver chips based on serial circuit 5 specification.

[0025] Furthermore, it is not necessary to say that an actuation input can be performed from the input section (not shown) of remote control server equipment 1. The actuation menu generation section 26 by which additional installation was carried out generates an actuation input screen, and it carries out a display output to a display 40 through a display and control section 24. The device judging section 27 and the operation mode judging section 28 carry out the decision output of the operation mode to controlled-system electronic equipment based on the data by which the actuation input was carried out. The device code generator 29 carries out the generation output of device code read-out of controlled-

system electronic equipment, and the device code data from the device code table 15. The control-code generation section 30 carries out the generation output of read-out and the control-code data for the control code which corresponds to the operation mode from the control code table 16. The transmit data composition section 18 compounds device code data, control-code data, and other data, and carries out the synthetic output of the transmit data. The line control section 20 sends out this transmit data to the device of an assignment transmission place via the serial circuit 5.

[0026] A cursor input can be carried out at the actuation input screen which the actuation menu generation section 26 generated by cursor remote control transmitter 2A by which additional installation was carried out, and the cursor remote control receive section 12. It is role ***** of a general-purpose remote control transmitter by the actuation input screen which there are formats, such as a remote mouse, an optical pointer, and remote putt, and the menu generation section 26 generated although detail explanation was omitted since there was no method of cursor remote control with the theme of this invention.

[0027] The reservation input section 31 by which additional installation was carried out can perform the reservation input of the specified electronic equipment of timer control. The storage input of the reservation data, such as setting time of day, a device code, and a control code, is carried out at the reservation memory 32, and the reservation read-out section 37 supervises the stored data of the reservation memory 32 in scheduled time along with the time-of-day data from a timer 34, and if it becomes the time amount by which a reservation setup was carried out, it will input this stored data into read-out, a device code generator, the control-code generation section, etc. Since next explanation overlaps the above-mentioned contents, it is omitted. Furthermore, based on the status data of the received electronic equipment of operation, and the time data from a timer 34, the energy-saving control section 33 generates automatically energy-saving control commands, such as electronic equipment (air-conditioner) 4, and issues a control command.

[0028] The received-data separation section 21 by which additional installation was carried out carries out the separation output of the received data from the input signal by the side of the electronic equipment received via the serial circuit. The device actuation receive section 23 does the reception output of the status data of a device of operation. The device action indication section 25 carries out the display output of the operating state of an applicable device to a display 40 based on the received status data of operation. Images, such as camera equipment 4A from an image data receive section (not shown), are displayed on the display 40. When a sensor and the sensor data transmitting section (not shown similarly) are attached to this camera equipment 4A and there is an invader, a superposition indication of the warning is given on the display screen.

[0029] The remote control transmitter-receiver 6 by which communication link connection was made at the serial circuit 5 carries out a reception recovery, and the circuit remote control receive section 22 receives the remote control data transmitted in this serial circuit 5. While these remote control data are stored temporarily in the remote control receiving memory 13, the separation output of the device code is carried out by the remote control data separation section 14. Since the following overlaps the above-mentioned contents, it omits explanation.

[0030] The configuration and actuation of the remote control transmitter-receiver 6 are explained using drawing 3. The remote-control transmitter-receiver 6 of an example separates transmitting assignment place data from the received data from the line-control section 61 and this serial circuit 5 which make communication link connection with a serial circuit 5, and a standard configuration is carried out in the reception judging section 62 which judges authorization for reception, the equipment ID memory 63 which have memorized ID of this equipment, the data-transfer section 64 transmit the remote-control data which came out in reception authorization, and the modulation transmitting section 65 become irregular about these remote-control data, and carry out a transmitting output.

[0031] Furthermore, the additional installation of the reception recovery section 66 which carries out the reception recovery of the remote-control signal and the data signal from the remote-control transmitter 2 or electronic equipment 4, the receiving data memory 67 which stores received data temporarily, the remote-control data separation section 68 which separate remote-control data from these received data,

the data separation section 71 which similarly separate data, the transmitting claim section 70 ask data transmitting authorization to remote-control server equipment 1, the circuit transmit data generation section 69 generate the transmit data transmit to a serial circuit 5 is carried out.

[0032] Furthermore, additional installation of the data receive section 72 which receives the digital AV data sent out from electronic equipment, various data, etc., the data transfer section 64 which carries out the transfer output of the received this data at the serial circuit 5, the circuit data receive section 73 which receives digital AV data, various data, etc. from the serial circuit 5, the data transmitting section 74 which carries out the transmitting output of the received this circuit data at electronic equipment is carried out.

[0033] Detail actuation is explained in accordance with the flow of a signal. The circuit data (remote control data are included) sent via the serial circuit 5 from remote control server equipment 1 are inputted by the line control section 61. The reception judging section 62 carries out a comparison operation to the equipment ID memory 63 with the equipment ID by which storage registration is carried out, and judges reception authorization while it separates the equipment ID of the destination from the inputted circuit data. If reception authorization is obtained, the data transfer section 64 will carry out the transfer input of the received circuit data at the modulation transmitting section 65. The modulation transmitting section 65 carries out pulse modulation of infrared radiation, the feeble electric wave, etc. by circuit data, and sends them out towards receive section 4a of electronic equipment 4.

[0034] The reception recovery section 66 carries out the reception recovery of the remote control signal and data signal from the remote control transmitter 2 or electronic equipment 4. The remote control data and the received data by which the reception recovery was carried out are stored temporarily at the receiving data memory 67. The remote control data separation section 68 carries out the separation output of the remote control data from these received data. On the other hand than these received data, the data separation section 71 carries out the separation output of digital AV data, the various data, etc.

[0035] The transmitting claim section 70 applies for transmitting authorization to remote control server equipment 1. If authorization is obtained, the circuit transmit data generation section 69 generates remote control data, digital AV data, etc. by which the separation output was carried out, and the circuit transmit data which added Equipment ID etc., and sends it out to the serial circuit 5 through the line control section 61. A reception recovery is carried out in the circuit data receive section 73, and the storage input of the circuit transmit data sent out from remote control server equipment or other electronic equipment is once carried out at the receiving data memory 67. The data transmitting section 74 inputs into the modulation transmitting section 65 digital AV data and the other data by which reception storage was carried out.

[0036] It gets over in the reception recovery section 66, and the data receive section 72 does separation reception of digital AV data or the other data, and the sending signal from electronic equipment once carries out a storage input at the receiving data memory 67. Since next actuation overlaps the above-mentioned contents, it omits explanation.

[0037] An infrared transmission means to receive the remote control signal with which the transmission system of the modulation transmitting section 65 and the reception recovery section 66 carried out pulse modulation of the infrared radiation, a feeble electric-wave transmission means to receive the remote control signal which carried out pulse modulation of the feeble electric wave, or the infrared transmission means based on Ir-DA specification is chosen by conditions, such as an application of a system, and data volume to transmit, transmission speed. Moreover, even if both transmission system is a separate method, use pointing out and there is. [no]

[0038] The configuration of the control data which transmits the serial circuit 5 using drawing 4 is explained. the device ID section d3 which expresses ID of the header unit d1 and the data discernment section d2 showing the classification of the data to transmit by which drawing 4 (b) is mainly sent to the electronic-equipment sides 3 and 4 from remote-control server equipment 1, and the device connected by getting down and expressing the logical structure of data, the device code d4 of the electronic equipment control, and the control code d5 showing the operation mode -- it consists of data divisions d6, such as AV data, etc. succeedingly. Drawing 4 (b) mainly consists of the status sections d51, the data

divisions d6, etc. which express the logical structure of the going-up data sent to remote-control server equipment 1 from the electronic-equipment sides 3 and 4, and express a header unit d1, the data discernment section d2 showing the classification of the data to transmit, the device ID section d3 showing ID of the device connected, the transmitting ID section d41 showing ID of a transmitting agency device, the status of electronic equipment of operation, etc.

[0039] Synthetic actuation and an example of operation are explained using drawing 1, drawing 2, and drawing 3. The serial circuit 5 is not connected directly but, as for the control-terminal[exclusive]-less electronic equipment 4 (air-conditioner), communication link connection of the remote control receive section 4a is indirectly made by the remote control signal through the remote control transmitter-receiver 6. Remote control of an air-conditioner 4 is performed via the remote control transmitter-receiver 6 from the remote control transmitter 2 and remote control server equipment 1. Remote control, such as revolution control of control-terminal[exclusive]-less electronic equipment 4A (camera equipment) and zoom control, is performed via remote control transmitter-receiver 6' from remote control server equipment 1. Furthermore additional installation of the reception recovery section 66, the data receive section 72, the data transfer section 64, etc. is carried out at remote control transmitter-receiver 6', the digital image data from camera equipment (4A) can be received, and it can deliver directly by serial circuit 5 course to the electronic equipment (VTR) 3 and 3 (monitor)B with an exclusive control terminal, 3D (editor), etc. Remote control data can be directly transmitted [like the case of camera equipment] between electronic equipment with an exclusive control terminal, and between remote control server equipment 1 and received in a digital image data list by serial circuit 5 course.

[0040]

[Effect of the Invention] This invention is carried out with the gestalt explained above, and does so the effectiveness described below. Two or more electronic equipment with an exclusive control terminal or control-terminal[exclusive]-less electronic equipment, Communication link connection of a remote control transmitter-receiver and the remote control server equipment is made by the serial circuit which carries out bidirectional transmission of the data for remote control, and the digital AV data. Remote server equipment By receiving the remote control signal from the remote control transmitter of two or more electronic equipment, separating remote control data from this remote control signal, and carrying out a transfer output via a serial circuit at the transmission place the transmission place judging means judged these remote control data to be Communication link connection of remote control server equipment and two or more electronic equipment was made by the serial circuit, and remote-control data, signal data, and the remote control server system transmitted to coincidence have been proposed.

[Translation done.]